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(54) Title: CATALYST HAVING METAL IN REDUCED QUANTITY AND REDUCED CLUSTER SIZE

(57) Abstract: The invention contemplates a method of making a catalytic material, and uses of the material. The catalytic material is made by depositing catalytic metals, such as gold or platinum, on substrate materials, such as lanthanum-doped ceria or other oxides. The catalytic metal, which comprises both crystalline and non-crystalline structures, is treated, for example with aqueous basic NaCN solution, to leach away at least some of the crystalline metallic component. The remaining noncrystalline metallic component associated with the substrate exhibits catalytic activity that is substantially similar to the catalyst as prepared. The use of the catalyst in an apparatus such as a reactor or analytic instrument is contemplated, as is the use of the catalyst in efficient, cost-effective reactions, such as removal of carbon monoxide from fuel gases, for example by performing the water gas shift reaction.